Atty. Docket No. MP0299
Application No: 10/634,218

Remarks

Applicants' undersigned representative wishes to thank Examiner Wang for the thorough examination of the present application and for the indication that Claims 6-9, 12, 15, 18, 19, 21-26, 37-40, 45-47, 55, 57, 60, 62, 63, 65-70, 78-81, 84-86, and 93 are allowable over the art of record. Applicants' undersigned representative also wishes to thank Examiner Wang for the helpful and courteous discussion held with the undersigned representative on November 27, 2007. As discussed, Claims 14 and 59 have been amended to include the limitations of allowable Claims 15 and 60, respectively. Also as discussed, further evidence is submitted herewith to show that the subject matter of the claims was conceived prior to Gregorious et al. (U.S. Pat. No. 7,088,976; hereinafter "Gregorious") and was diligently reduced to practice thereafter. The evidence also establishes that the subject matter of the claims was conceived and diligently reduced to practice before the non-provisional filing date of Hofmeister et al. (U.S. Pat. Appl. Publ. No. 2004/0071389; hereinafter "Hofmeister"), and at least some of the subject matter disclosed by Hofmeister and relied on for the rejection of Claim 35 et seq. is not present in the corresponding provisional application. The following remarks shall further summarize and expand upon other topics discussed.

Claim 15 has been amended to depend from Claim 89. Claim 60 has been canceled. No new matter is introduced by the above Amendment.

The rejections based on 35 U.S.C. §§ 102-103 are overcome in part by the Declaration of Hongying Sheng, submitted with the Amendment dated July 13, 2007, which establishes that the subject matter of Claim 1 was conceived prior to the publication date of the primary reference cited against Claim 1, and the Declaration of Chee Hoe Chu (submitted herewith), which establishes that the claimed subject matter was diligently reduced to practice thereafter. As a result, Claim 1 is allowable over the cited reference(s). In addition, at least some of the subject matter of the cited reference (Hofmeister) relied on for the rejection of Claim 35 is not available against the rejected claims. Finally, the remaining references (e.g., Sanduleanu, Cai, and Saleh)

do not disclose or suggest all of the limitations of independent Claims 1, 14, 35, 51, 59, 76 and 89. Accordingly, the present claims are considered patentable over the cited references.

The Rejection of Claims 1-5, 10, 11, 13, 27, 28, 34, 51-54, 56, 58 and 71-75 under 35 U.S.C. § 102(e)

The rejection of Claims 1-5, 10, 11, 13, 27, 28, 34, 51-54, 56, 58 and 71-75 under 35 U.S.C. § 102(e) as being anticipated by Gregorious is respectfully traversed.

Gregorious is not available against the present claims under 35 U.S.C. § 102(e). Under 35 U.S.C. § 102(e), an earlier filed application is available against the claims of a later filed application if the earlier filed application was:

(1) published under 35 U.S.C. § 122(b), by another filed in the United States before the invention by the applicant for patent or

(2) filed in the United States before the invention by the later applicant and subsequently patented, except that an international application filed under the treaty defined in 35 U.S.C. § 351(a) shall have the effects for the purposes of 35 U.S.C. § 102(e) only if the international application was published in the English language.

Gregorious has a filing date in the U.S. of October 18, 2004 under 35 U.S.C. § 371(c). By contrast, the present application has a filing date of August 4, 2003. As a result, Gregorious is not available under condition (1) of 35 U.S.C. § 102(e).

Under condition (2) of 35 U.S.C. § 102(e), the PCT (international) filing date of Gregorious is considered the effective filing date **only if** the international application was published in the English language (35 U.S.C. § 102(e); emphasis added). International patent publication WO 03/034647 (a copy of which was submitted with the Amendment filed July 13, 2007) appears to be the international application corresponding to Gregorious. As can be easily seen, International Patent Publ. No. WO 03/034647 is published in German, not English. Accordingly, Gregorious cannot be cited against the present claims under condition (2) of 35 U.S.C. § 102(e).

However, as discussed in the Remarks submitted with the Amendment filed July 13, 2007, one might question whether WO 03/034647 is available against the present claims under 35 U.S.C. § 102(a) (i.e., where the invention may have been described in a printed publication in this or a foreign country before the invention by the present Applicants). WO 03/034647 has a publication date of April 24, 2003, and as mentioned above, the filing date of the present application is August 4, 2003. However, as established by the Declarations of Hongying Sheng and Chee Hoe Chu (submitted herewith), the subject matter of Claim 1 was conceived prior to the publication date of Gregorious, and was diligently reduced to practice thereafter. For example, as evidenced by the attached Declaration of Chu, the architecture defined in the present Claim 1 was diligently manufactured and tested during the time period including April 23, 2003 to May 28, 2003 (see paragraph 5 of the attached Declaration of Chu).

Attached as Exhibit A to the Declaration of Chu is a redacted copy of a System Validation Report page for a first version of a multiport integrated circuit device designed and sold by Marvell (and manufactured according to Marvell's instructions; see paragraph 6 of the attached Declaration of Chu). Pages 5-9 and 11 of Exhibit A contain data showing that the first version of the multiport integrated circuit device analyzed in Exhibit A has a multiplexer ("mux")-to-multiplexer latency that is unacceptably large for a number of intended uses of the integrated circuit device. The date of the System Validation Report in Exhibit A is before April 23, 2003 (see paragraph 7 of the attached Declaration of Chu).

As evidenced by the Declaration of Hongying Sheng (submitted with the Amendment on July 13, 2007), the architecture defined in the present Claim 1 was conceived prior to April 23, 2003 (see paragraph 6 of the Declaration of Sheng). Attached as Exhibit A to the Declaration is a copy of viewing screen printout from the Declarant's workstation of a design directory containing an integrated circuit design that includes an embodiment of the architecture defined in Claim 1 (hereinafter, the "working embodiment"). The file named "dpll.fm" contains a design (in a hardware description language) that includes the working embodiment. The date of the design file is prior to April 24, 2003 (see paragraph 7 of the Declaration of Sheng).

A specification defining the integrated circuit including the working embodiment and used internally at Marvell during product development was revised prior to April 24, 2003. An item identified in the change list of the revised specification relates to the working embodiment (see paragraph 8 of the Declaration of Sheng). The integrated circuit including the working embodiment was taped out at a wafer manufacturing fab prior to April 24, 2003 (see paragraph 8 of the Declaration of Sheng). Wafers containing the integrated circuit (including the working embodiment) were manufactured after tape out. At least part of the manufacturing process occurred after April 24, 2003 (see paragraphs 9-10 of the Declaration of Sheng).

The manufactured integrated circuit was diligently tested after manufacturing (paragraph 11 of the Declaration of Sheng). The testing of the manufactured integrated circuit was not known or believed to reveal any operational defects in the architecture recited in Claim 1. From this result, the working embodiment of the architecture of Claim 1 was concluded to have actually been reduced to practice (paragraph 11 of the Declaration of Sheng).

Exhibit B to the Declaration of Chu supports the conclusion in paragraph 11 of the Declaration of Sheng. Exhibit B to the Declaration of Chu is a redacted copy of the System Validation Report page for version 2.0 of the same multiport integrated circuit device designed and sold by Marvell (and manufactured according to Marvell's instructions) analyzed in Exhibit A (see paragraph 8 of the attached Declaration of Chu). However, the multiport integrated circuit device designed and sold by Marvell contains a circuit embodying the architecture defined in the present Claim 1 above (the "working embodiment;" see paragraph 8 of the attached Declaration of Chu). The date of the System Validation Report in Exhibit B for version 2.0 of the multiport integrated circuit device is May 28, 2003 (see paragraph 9 of the attached Declaration of Chu).

The integrated circuit analyzed in Exhibit B was taped out at a wafer manufacturing fab prior to April 24, 2003. Wafers containing the integrated circuit analyzed in Exhibit B and described above were manufactured after tape out. At least part of the manufacturing process occurred after April 24, 2003 (see paragraph 11 of the attached Declaration of Chu).

The manufactured integrated circuit described in paragraph 11 of the Declaration of Chu was diligently tested after manufacturing (see paragraph 12 of the attached Declaration of Chu). One of the results of testing the manufactured integrated circuit was that round-trip multiplexer latency was reduced to 4 data words (see Exhibit B to the Declaration of Chu, page 5, the first 4 rows in the "Mux Latency" table, under the column labeled "Remarks"). This result is evidence that the working embodiment had been successfully reduced to practice on or before May 28, 2003 (see paragraph 13 of the attached Declaration of Chu).

Attached as Exhibit C to the Declaration of Chu is a redacted copy of the Characterization Report page for version 2.0 of the multiport integrated circuit device analyzed in Exhibit B of the Declaration of Chu. The date of the Characterization Report in Exhibit B for version 2.0 of the multiport integrated circuit device is May 28, 2003 (see paragraph 15 of the attached Declaration of Chu). The data and results in Exhibit C of the Declaration of Chu from testing the manufactured integrated circuit show that round-trip multiplexer latency between the host (either of the far left-hand blocks in Figure 5, Section 7.3 of Exhibit C) and the device (far right-hand block in Figure 5, Section 7.3 of Exhibit C) was reduced to 4 data words (see Exhibit B, page 5, the first 4 rows in the "Mux Latency" table, under the column labeled "Remarks"). The results shown in Figures 31-47 of Exhibit C are evidence that the working embodiment had been successfully reduced to practice on or before May 13, 2003 (see paragraph 16 of the attached Declaration of Chu).

Consequently, the subject matter of Claim 1 was conceived prior to the publication date of WO 03/034647 (April 24, 2003), and as established by the Declaration of Chu, diligently reduced to practice (i.e., manufactured and tested) during the time period including April 23, 2003 to May 28, 2003 (see paragraph 5 of the Declaration of Chu). As a result, no form of the Gregorious reference is available against the present claims under 35 U.S.C. § 102(e) or 35 U.S.C. § 102(a). As a result, the rejection of Claims 1-5, 10, 11, 13, 27, 28, 34, 51-54, 56, 58 and 71-75 as being anticipated by Gregorious is unsustainable, and should be withdrawn.

The Rejection of Claims 14, 16, 17, 20, 59, 61, 64, 89-92 and 94-97 under 35 U.S.C. § 102(e)

The rejection of Claims 14, 16, 17, 20, 59, 61, 64, 89-92 and 94-97 under 35 U.S.C. § 102(e) as being anticipated by Sanduleanu (U.S. Pat. Appl. Publ. No. 2003/0034849) is, in part, respectfully traversed, and has been, in part, obviated by appropriate amendment.

Claims 14 and 59 have been amended to include the allowable limitations of Claims 15 and 60, respectively. Claims 16, 17, and 20 depend from Claim 14 and are therefore allowable for at least the same reasons. Claims 61 and 64 depend from Claim 59 and are therefore allowable for at least the same reasons.

The rejection of Claims 89-92 and 94-97 appears to be in view of Gregorious, instead of Sanduleanu (see, e.g., p. 14, ln. 18 – p. 16, ln. 5 in the Office Action of October 4, 2007). For example, the Office Action states that Claim 89 is a method claim related to Claim 1 (p. 14, ll. 18-21 in the Office Action of October 4, 2007). Claim 1 is rejected in view of Gregorious, as discussed above. In addition, the Office Action appears to rely exclusively on Gregorious as disclosing the limitations of Claim 90-92 and 94-97 (p. 15, ln. 1 – p. 16, ln. 2 in the Office Action of October 4, 2007). As explained above, Gregorious is not available against the present claims under 35 U.S.C. § 102(e) or any other subsection of 35 U.S.C. § 102.

Thus, the rejection of Claims 89-92 and 94-97 as being anticipated by Gregorious is unsustainable, and should be withdrawn.

The Rejection of Claims 35, 36, 76 and 77 under 35 U.S.C. § 102(e)

The rejection of Claims 35, 36, 76 and 77 under 35 U.S.C. § 102(e) as being anticipated by Hofmeister is respectfully traversed.

Hofmeister does not appear to disclose a *device* having a *plurality* of receivers, each coupled to a unique one of a plurality of clock recovery loops, and a *plurality* of transmitters, each transmitter being coupled to a unique filter circuit receiving recovered clock information

from a corresponding clock recovery loop. Hofmeister appears to disclose a device (e.g., 102 or 120 in FIG. 1) having at most a single receiver and a single transmitter (see, e.g., FIGS. 1-6 of Hofmeister). Thus, Hofmeister does not appear to anticipate the present Claims 35, 36, 76 and 77.

Furthermore, Hofmeister claims priority to U.S. Provisional Application No. 60/410,509, filed on September 13, 2002. However, Hofmeister has an actual filing date of July 25, 2003, after the conception date of the subject matter of the present Claims 1 and 35 (see the Declaration of Sheng, the attached Declaration of Chu, and the discussion of Gregorius above). As will be explained below, Hofmeister is not entitled to an effective filing date of September 13, 2002 for purposes of rejecting Claim 35, and the subject matter of the present Claim 35 was conceived and diligently reduced to practice (i.e., manufactured and tested) prior to the actual filing date of Hofmeister.

Hofmeister is entitled to an effective filing date of September 13, 2002 (the filing date of the corresponding provisional application) ***only*** if the provisional application(s) properly supports the subject matter relied upon to make the rejection, in compliance with 35 U.S.C. § 112, first paragraph. M.P.E.P. § 2136.03, III; emphasis added. 35 U.S.C. 112, first paragraph, states:

> "The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same..."

Thus, if the provisional application does not describe the subject matter relied upon to make the rejection, or the manner and process of making and using it, in terms as to enable any person skilled in the art to make and use the same, then Hofmeister is not entitled to the filing date of the provisional application for purposes of 35 U.S.C. § 102(e).

U.S. Provisional Application No. 60/410,509 (a copy of which was submitted with the Amendment filed July 13, 2007) does not contain a figure having two transceiver modules

therein, both in (wired) communication with a network, as shown in FIG. 1 of Hofmeister (which is relied on for the rejection). Instead, the provisional application focuses primarily (if not exclusively) on the circuitry and functions ***within a single transceiver module*** (i.e., one receiver, one transmitter) or the communications between ***a single receiver or transmitter*** and either ***the host or the network*** to which it is connected. Thus, there appears to be no written description in U.S. Provisional Application No. 60/410,509 of an optical data transmission system as shown in FIG. 1 of Hofmeister.

Consequently, Hofmeister is not entitled to the filing date of the corresponding provisional application for purposes of 35 U.S.C. § 102(e). As a result, Hofmeister does not appear to be available as a reference against the present claims under 35 U.S.C. § 102(e). Therefore, this ground of rejection of is unsustainable, and should be withdrawn.

The Rejection of Claims 29-33 under 35 U.S.C. § 103(a)

The rejection of Claims 29-33 under 35 U.S.C. § 103(a) as being unpatentable over Gregorious in view of Cai (U.S. Pat. No. 7,050,777; hereinafter "Cai") is respectfully traversed.

As explained above, Gregorious is not available against the present claims under 35 U.S.C. § 102(e). Cai does not appear to be capable of supporting this ground of rejection alone. Accordingly, the rejection of Claims 29-33 as being unpatentable over Gregorious in view of Cai is unsustainable, and should be withdrawn.

The Rejection of Claim 41 under 35 U.S.C. § 103(a)

The rejection of Claim 41 under 35 U.S.C. § 103(a) as being unpatentable over Hofmeister in view of Cai is respectfully traversed.

As explained above, Hofmeister does not appear to disclose a *device* having a *plurality* of receivers, each coupled to a unique one of a plurality of clock recovery loops, and a *plurality* of

transmitters, each transmitter being coupled to a unique filter circuit receiving recovered clock information from a corresponding clock recovery loop. Cai also does not appear to disclose a device having a plurality of receivers, each coupled to a unique one of a plurality of clock recovery loops, and a plurality of transmitters, each transmitter being coupled to a unique filter circuit receiving recovered clock information from a corresponding clock recovery loop. Accordingly, the rejection of Claim 41 as being unpatentable over Hofmeister in view of Cai is unsustainable, and should be withdrawn.

Furthermore, as explained above, Hofmeister is not entitled to the filing date of the corresponding provisional application for purposes of 35 U.S.C. § 102(c). As a result, Hofmeister does not appear to be available as a reference against the present claims under 35 U.S.C. § 102(e). Cai does not appear to be capable of supporting a rejection of Claim 41 alone. Therefore, this ground of rejection of is unsustainable, and should be withdrawn.

The Rejection of Claims 42-44, 48-50, 82, 83, 87 and 88 under 35 U.S.C. § 103(a)

The rejection of Claims 42-44, 48-50, 82, 83, 87 and 88 under 35 U.S.C. § 103(a) as being unpatentable over Saleh et al. (U.S. Pat. No. 7,050,777; hereinafter "Saleh") in view of Gregorious is respectfully traversed.

As recognized in the Office Action, Saleh is saliently deficient with regard to the claimed filter circuit configured to filter information from said recovered clock signal and provide a transmitter clock adjustment signal that adjusts said transmitter in response to inputs from (i) said clock recovery loop and (ii) a transmitter clock circuit; and c) a transmitter in communication with said filter circuit, configured to receive said transmitter clock adjustment signal and transmit said data to said second device in accordance with said transmitter clock signal (see, e.g., the second full paragraph on page 21 of the Office Action dated October 4, 2007). As explained above, Gregorious is not available against the present claims under 35 U.S.C. § 102(c). Accordingly, the rejection of Claims 42-44, 48-50, 82, 83, 87 and 88 as being unpatentable over Saleh in view of Gregorious is unsustainable, and should be withdrawn.

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Conclusions

In view of the above amendments and remarks, the present application is in condition for allowance. Early notice to that effect is earnestly requested.

If it is deemed helpful or beneficial to the efficient prosecution of the present application, the Examiner is invited to contact Applicants' undersigned representative by telephone.

Respectfully submitted,

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